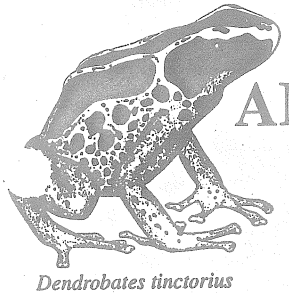
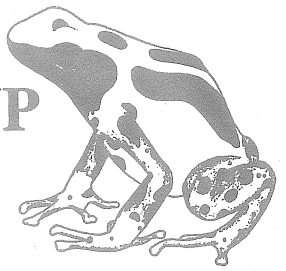


Dendrobates tinctorius
(2 White morph varients)

AMERICAN DENDROBATID GROUP



Newsletter No. 27 May-June 1996

STATEMENT OF PURPOSE

The purpose of the American Dendrobatid Group (ADG) is to educate enthusiasts and distribute information on all aspects of Dendrobatid husbandy and captive propagation, and to develop better communication between Dendrobatid breeders. The ADG is also interested in the maintance and propagation of Mantellid frogs, Atelopid toads, and other unusual frogs and toads. Its format and bi-monthly distribution are designed to provide current information and new developments in the hobby. This Newsletter appears six time a year at a cost $15.00 per calander year. Back issues for $3.00 each, or on a yearly basis: 1992 isavailable for $5.00; 1993 and 1994 for $10.00/ year, and 1995 for $12.50.

Subscriptions, comments, articles, photographs, etc. should be sent to Charles Powell (2932 Sunburst Dr., San Jose, CA 95111 Tel.: (408) 363-0926) .

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Notes from the Editor

The Second American Frog Day has been scheduled for September 7, 1996 from 9 AM to 4 PM. It will be held at First Assembly of God Church, 801 Hellyer Ave., San Jose, California. Admission is $5.00 at the door and $3.00 before the event. Speakers have not been set at this time. For further information or to register for the event please contact the Newsletter editor. Also anyone interested in selling animals at the event please contact the editor for details.

We have a wealth of information in this issue. In fact it was to much and I've had to break up a wonderful article on *Dendrobates auratus* into two issues. Look for the second part of the article by Ian Hallett (our first Canadian member) in the next Newsletter.

The Newsletter editor is looking for someone to translate various foreign frog articles for inclusion here. If anyone is fluent in German, Dutch, and/or Swedish and would like to translate some interesting frog articles please contact the Newsletter editor.

Husbandry and Breeding of *Dendrobates auratus* - the green and black poison frog (Part 1)

Ian Hallett

Dendrobates auratus, commonly know as the green and black poison arrow frog, is one of the most commonly available and easy to keep of the poison frogs. It makes an excellent beginner's Dendrobatid and will thrive and breed if given the right conditions. The following paper describes the species, their housing, feeding, breeding and rearing of tadpoles and frogs.

Description

Dendrobates auratus is found primarily in Central America ranging from Nicaragua south to northern Columbia. It has also been introduced to Hawaii where a small population exists. The Hawaiian form of *D. auratus* is often seen in the pet trade - perhaps because of the ease of importation. As the common name suggests the most common form of *D. auratus* seen in herpetoculture, is a

glossy black frog with bands of metallic green over the body. The amount of green present and its pattern depends on the population from which the frogs arise. *Dendrobates auratus* is one of the more variable of the poison frogs with distinct populations showing a wide color range from all black, to green and black, blue and black, yellow and black, white and black, green and tan , brown and tan, and a few other color forms. Frogs from the island of Tobago are a dull brown with yellow-green stripes. On the Pacific coast of Panama exists a morph in which the green is replaced with a brilliant metallic blue.

Adult frogs reach a typical length of about 45 mm with a maximum size of about 60 mm (Heselhaus, 1992) and a minimum of only 25 mm. Size is also dependent on the population from which it arose, with whole populations being either smaller, normal, or larger in size. Females are larger and have plumper bodies than males. Males can also be identified by their larger toe pads and the fact that they call with a low trilling buzz. Except for calling all the secondary sexual characteristics are comparative and can only be ascertained among a group of mature individuals.

In the wild *D. auratus* are at home among the leaf litter in the dryer regions of warm tropical forests. They are also at home in the cocoa plantations which are taking over part of their range. They will climb somewhat among the undergrowth but are primarily terrestrial. They can be found living in pairs or small colonies at altitudes from sea level to 800 m (Heselhaus, 1992). They often congregate at the base of large trees' where they feed on ants and other small insects found on the forest floor.

Care in captivity

To successfully keep and breed *D. auratus* in captivity they require a large, warm, and humid terrarium and an abundance of small, live food. In fact, feeding these small frogs is one of the most problematic aspects of husbandry and so it will be discussed before the description of housing and breeding.

Before establishing a colony of Dendrobatids a reliable food source must first be obtained. Dendrobatids are active frogs with high metabolisms and require a constant supply of food. It has been suggested that they will die within a few days if not fed, but this is not true of well-fed adults which can survive for at least 7 days without food, as personal experience during an 'extended' move has shown. Females carrying eggs require constant feeding and this author's experiences has shown that clutch size may be dependent on diet. The basic food for captive poison frogs are small newly hatched to one week old crickets and adult fruit flies. Purchasing these can be very expensive and obtaining a reliable supply may not always be possible so most hobbyists keeping more than a few frogs raise their own food - a time consuming task. Feeding can also be supplemented with very small waxworms, which the frogs seem to relish. Using wild-collected ants as a food source was also attempted, but the frogs showed little interest in them and they invariably escaped from the terrarium. The frogs described in this article were raised and maintained almost exclusively on young crickets fed a diet of dry cat food and skim milk powder. The crickets were dusted with a calcium and vitamin supplement before feeding to the frogs. The adult frogs were fed every one to two days with several dozen 1/16" to 1/8" long crickets for a colony of five adult frogs. Food was provided daily only during the breeding periods.

My colony of 3.2 *D. auratus* is kept in a 35-gal. "long" tank (36"wide x 12" deep x 16" high) standard all glass aquarium. A 3-cm thick layer of crushed marble was placed on the bottom of the terrarium for drainage. Over this was placed a layer of fiberglass insect screening on top of which

was placed 4 to 5 cm of sterilized potting soil mixed 3:1:1 with peat moss and washed sand. The screen and soil mix were omitted from one corner (an area of about five square inches) and limestone rocks were placed around the edge of this area to help hold back the soil. The pond, thus created, contained the crushed marble substrate and several other small stones. As Dendrobatids are reported to be poor swimmers, the pool was never filled to more than 5 mm depth and ample spots for climbing out of the pool were provided. Limestone rocks and driftwood were placed throughout the terrarium to provide hiding spots and create a natural effect. The terrarium was then planted with a single large pot of a hardy vining plants which quickly grew all over the terrarium and provided a very natural appearance. In addition many hiding places were provided as it sent out aerial roots into the soil. A decorative aquarium background was placed on the back and half of each side of the terrarium to provide a feeling of security for the frogs.

Opinions vary as to the intensity and quality of light provided to Dendrobatids (Heselhaus, 1992). My lighting was provided by a 36" polo light fixture, fitted with an Aqua-glow ® bulb used with tropical fish aquariums. This provided a very intense light which was muted by wrapping aluminum foil at intervals along its length until about half of the bulb was covered. The light was set on a timer with a 12-hour photo-period. Measurements in the rain forest in South America, where the animals live, indicate that only 1% of natural sunlight reaches the forest floor. However, that is more light than is present in a normal room at high latitudes in the northern hemisphere and supplemental light is recommended for both the frogs and the plants in the terrarium. The use of full-spectrum light is debatable. Indeed, the frogs described here thrive and reproduce successfully without the use of full spectrum lighting. It should be noted however that all food was dusted with a calcium and vitamin D3 supplement.

The lighting also provided some heat for the terrarium. Additional heat was provided by placing a standard medical heating pad below the terrarium. This provided a temperature of 24°C to 26°C during the day and about 22°C at night. The under tank heating pad also provided for a high degree of humidity by evaporating the water in the bottom of the tank. About 75% of the screen top of the terrarium is covered in 0.5" rigid Styrofoam insulation to keep in the heat and humidity. Dendrobatids require high humidity, but also adequate ventilation. This is also necessary to prevent mold and mildew from growing in the terrarium. The water is topped up every 3-4 days and misted heavily every morning and evening, with aged dechlorinated tap water. A layer of dead leaves was placed in the terrarium when it is was first set up to imitate the natural habitat of the frogs as much as possible. Some authors (Heselhaus, 1992) recommend this while others (Anderson, 1994) warn against it as it may introduce parasites and fungus. I have found over time that the leaves rotted and molded and egg viability dramatically decreased. All eggs from the 4th and 5th clutches were fungused and died within two days of laying. When the leaves were removed the frogs continued to breed and egg mortality was virtually eliminated.

End of part 1.

HELPFUL HINTS

The Mailbag section of the February 1996 issue of "Reptiles" magazine (p. 4, 6) has a very informative letter on breeding fruit flies by Dr. Floyd Waddle of Fayetteville State University (North Carolina). I'd recommend that everyone who breeds fruit flies as food for their frogs (or for any other reason) read this letter as it give a lot of information and inexpensive hints for breeding fruit flies.

ANNOUNCEMENTS

Second American Frog (Amphibian) Day: The Second American Frog (Amphibian) Day has been scheduled for Saturday September 7th this year. It will, again, be held at First Assembly of God Church on Hellyer Ave. from 9 AM to 4 PM. Admission is $3 in advance or $5 at the door. Guess speakers have not been scheduled at this time, but will be announced later. Please contact the Newsletter editor if you are interested in selling or giving a presentation at Frog Day.

The Dendrobatid Frog (Home)Page and FrogNet Mailing List (by Anthony Hundt): After searching around on the Internet for information on poison frogs and finding lots of pictures, some vague descriptions, and almost nothing on captivity, I decided to setup a world-wide site dedicated to poison frog hobbyists. It is called "The Dendrobatid Frog Page," and is still under construction. It contains information on their natural history, care in captivity, and a classified section is in the works (for people looking for, or selling, or trading frogs). The web site is operational, although not complete, and is located at "http://tony.bb-elec.com/". In addition I maintain an e-mail list called FrogNet. It's purpose is to help speed communication between hobbyists worldwide. When you send a message to FrogNet it is immediately sent to all subscribers of the list. In this ^way anyone interested can reply to the question and the information will be distributed to everyone. To subscribe to FrogNet Mailing List send an e-mail message to "majordomo@bb.elec.com" with SUBSCRIBE FROGNET in the body of the message. Check the web site for more information.

Dutch Dendrobatid Group Newsletter: The Dutch Dendrobatid Group has recently published an English translation of its 1991 Newsletter. It is well done containing informative articles and many beautiful color photographs. It is available for $15 including postage. Also a few copies (11) of the 1990 English translation are still available for $7 if ordered with the 1991 translation. If checks are sent please add $8 for bank charges. Please order Newsletters from Hans Zwoferink, Holtenstraatig, 5045 CE Tilburg, HOLLAND. Tel.: +135705248.

NEW LITERATURE

Dendrobatids

Pérez, Por Alejandro, 1996, El venero multicolor *Dendrobates*. Reptilia, 1(3): 26-30.

ADS:

For Sale

Ads for sale of frogs, or requests or offering of breeding loans, etc. are free to members and will run for two issues only, unless the Newsletter editor is notified.

Dendrobates leucomelas	$45. ea.	Eric Anderson
Dendrobates histrionicus, 2 yr. captive, entire body mottled w/orange dots that bleeds to brown body (1.0 w.c.)	$60.	12231 Newberry Rd. Gainesville, FL 32607 (904) 332-7908
Dendrobates trivittatus, 1/2 grown, nice metallic green (0.1 c.b.)	$100.	
Epipedobates tricolor, red w/light blue dorolaterial stripes, center stripe yellow, currently producing eggs (1.1 c.b.)	$140/pair	
Epipedobates tricolor, 4 yr. captives, brown 2/light blue stripes (1.2 w.c.)	$120/trio	

Dendrobates auratus 'metallic morph' F1	$35 ea.	Juan Casanova
Dendrobates auratus 'Costa Rica' F1	$25 ea.	813 N. W. 23 Ct.
Dendrobates azurues 'teal morph' F1	$160 ea.	Miami, FL 33125
Dendrobates tinctorius 'cobalt w lots of yellow' F1	$60 ea.	(305) 642-9694
Dendrobates tinctorius 'cobalt-green morph' F1	$75 ea.	(305) 541-4039

Dendrobates tinctorius 'cobalt, 'giant orange,' and 'white,' and some *Dendrobates azureus.* Ted R. Kahn (P. O. Box 1375, Sterling, VA 20164-1375. Tel.: (703) 242-4543.

Dendrobates auratus 'El Copé, Panama'	$35 ea.	Anthony Leiro
Dendrobates leucomelas	$45 ea.	402 Holly Lane
Dendrobates tinctorius 'cobalt'	$50 ea.	Chapel Hill, NC 27514
		(919) 929-3522
Epipedobates tricolor (wine red with blue)	$35 ea.	Peter Fippinger
Phyllobates vittatus	$45 ea.	2535 Clermont St.
Mantella expectata (1.2, w.c.)	$35 ea.	Denver, CO 80207
Mantella laevigata (4 c.b., adults)	$45 ea.	(303) 399-5684
Microhylid achatina (1.2, w.c.)	$25 ea.	
Dendrobates tinctorius 'French Guyana' adults	$45 ea.	Kay Clausing 510 Stratford Ct., 308A Del Mar, CA 92014 (619) 550-7574
Dendrobates reticulatus c.b.	$35 ea.	Jane Merkel
Epipedobates tricolor (maroon with blue)	$25 ea.	3407 Manhattan Ave.
Mantella aurantiaca (2 adults)	$15 ea.	St. Louis, MO 63143
		(314) 644-3705
Dendrobates auratus 'Costa Rica'	$25 ea.	Eric Pflaging
Dendrobates leucomelas	$60 ea.	Hillside Herps
10% discount for ADG members		220 Hillside Dr.
		Clermont, FL 34711
		(904) 242-1616
Established animals:		Charles L. Powell
Mantella expectata 'yellow' (3)	$35 ea.	2932 Sunburst Dr.
Mantella pulchra 'green' (1)	$35 ea.	San Jose, CA 95111
will consider trades for the mantellas		(408) 363-0926
Tadpoles:		
Dendrobates auratus 'Zwartgroene'	$35 ea.	
Dendrobates auratus 'Costa Rican'	$25 ea.	Aaron Savino
Dendrobates auratus 'Hawaii'	$25 ea.	211 S. Fremont St., #110
Epipedobates tricolor 'Santa Isabela, Ecuador'	$25 ea.	San Mateo, CA 94401
		(415) 347-5198
Established animals:		Gregory J. Sihler
Mantella expectata (8)	$35 ea.	P. O. Box 26528
		Tempe, AZ 85285
		(602) 804-1223

REPTILE SPECIALITIE (John Uhern, 7473 Foothill, Tujunga, CA 91042 Tel. (818) 352-1796; Fax (818) 353-7381) has various captive breed Dendrobatids and wild imported *Mantella* for sale. Write or call for information.

Wanted:

Dendrobates lehmanni

Juan Casanova
813 N.W. 23 Ct.
Miami, FL 33125
(305) 642-9694

Epipedobates tricolor - female

Odo N. Dieter
369 Acorn Ave.
Telford, PA 18969
Home: (215) 721-0329
Work: (215) 393-8600

Dendrobates auratus 'Tabago Island'
Dendrobates tinctorius 'yellow back'

John DiLello
72 Frog Hollow Rd.
Califon, NJ 07830
(908) 832-2232

Dendrobates lehmanni
Dendrobates silverstonei
Phyllobates terribilis

Anthony Hundt
P. O. Box 284
Ottawa, IL 61350
(815) 433-4679 (Monday, Thursday, Friday, Saturday, after 5:30 PM CST)
thundt@rs232.bb-elec.com

Epipedobates tricolor (chocolate brown with three lime green stripes, light green marbled belly and red flash marks on the hind legs). Females wanted for purchase or breeding loan. Contact John Lewis (717 Bromley Rd., Bromley, KY 41017. Tel.: (606) 344-8796).

Dendrobates imitator 'green' - female
Dendrobates azureus - female'
will buy or trade

Eric Flagging
Hillside Herps
220 Hillside Dr.
Clermont, FL 34711

Dendrobates fantasticus - male	Charles Powell 2932 Sunburst Dr. San Jose, CA 95111-2264 (408) 363-0926
Dendrobates tinctorius 'yellow back' - male	Gregory J. Sihler P. O. Box 26528 Tempe, AZ 85285 (602) 804-1223 adicus@primenet.com
Dendrobates tinctorius 'cobalt' - male Any information or photographs of *D. occultator*	Blake Wood 6508 South 250th East Ave. Broken Arrow, OK 74014 (918) 357-2034 FAX (918) 357-2657

Societies

AMERICAN TARANTULA SOCIETY: For enthusiasts and scientists. Forum magazine (6/yr) educational, entertaining and readable. Over 150 Accurate scientific & common names of tarantulas and scorpions in each issue. Contact: ATS, P. O. Box 2594, S. Padre Island, TX 78597. $15/year US, $20 Canada, $30 elsewhere.

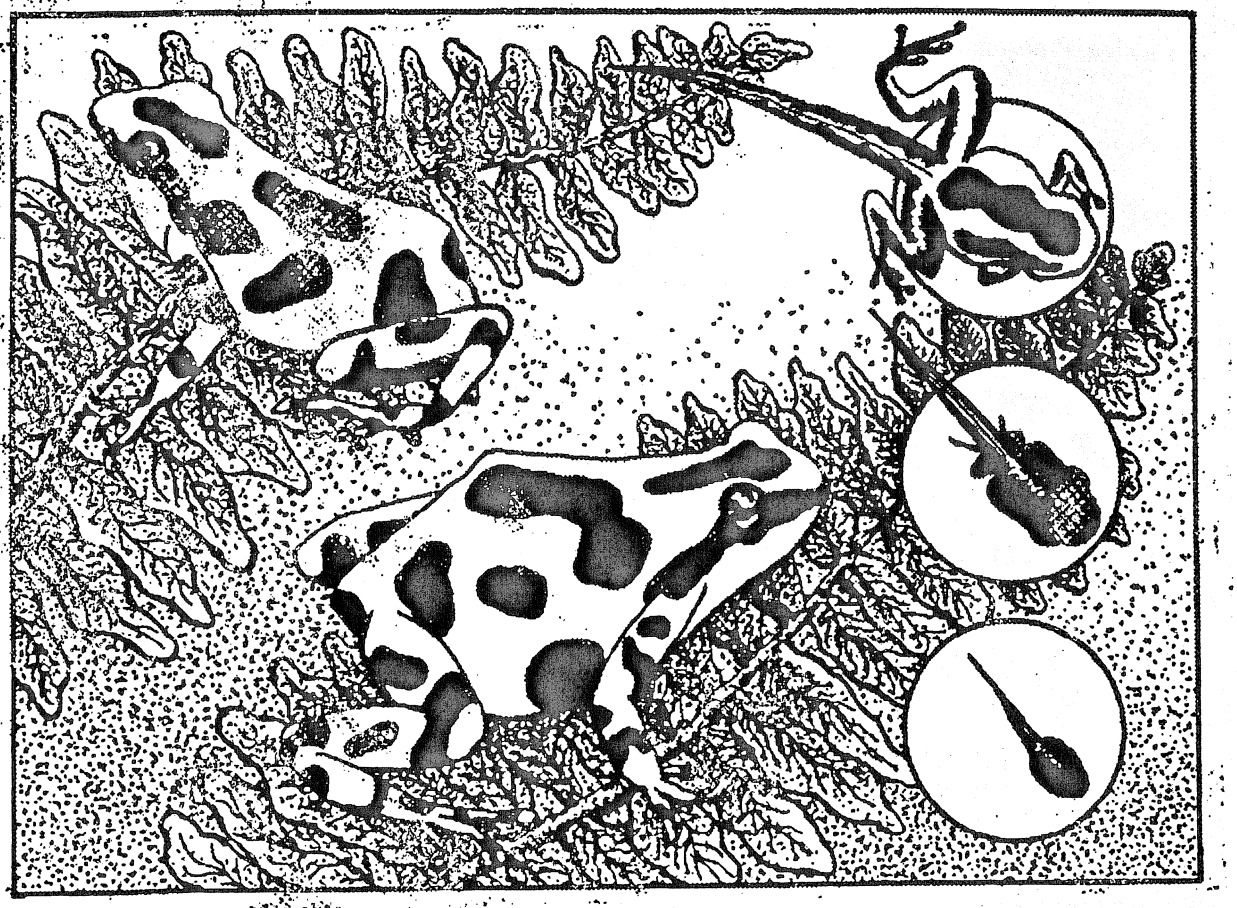
CHAMELEON INFORMATION NETWORK: The CiN is a member supported organization with an interest in the old world family of Chamaeleonidae. It publishes a quarterly publication (The CiN Newsletter) for $12/4 issues, $22/8 issues. Foreign subscribers add $1.50 for each issue. For subscription information contact: Ken Kalisch, 412 West E St., Encinitas, CA 92024. Tel.: (619) 436-7978. Send all payments to: Ardi Abate, 13419 Appalachian Way, San Diego, CA 92129.

INTERNATIONAL HYLID SOCIETY: A new, non-profit organization dedicated to treefrogs enthusiasts worldwide. "The Bulletin of the International Hylid Society" will be published quarterly starting in January/February 1996. Membership is $15/calendar year. For information or membership contact: William Brown, Amphibian Conservation and Research Center, 1423 Alabama St., Lafayette, IN 47905 USA. Tel: (317) 742-5331; e-mail: 102436.2415@compuserve.com.

NEW MEMBERS

Debbie Apostolou (Illinois)
John Bohrman (New Hampshire)
Neil Carey (California)
Bill Flore (Montgomery Zoo, Alabama)
Jenny Hackforth-Jones (Wisconsin)
Tim Kennedy (Illinois)
Brian Kubicki (Minnesota)
Clive Martin (Arizona)

Larry Miller (Ohio)
Tuan Nguyen (California)
Michael Novy (Ohio)
Larry Parks (Tennessee)
Randy Seiler (Maryland)
Greg Sihler (Arizona)
Benn Smith (Arizona)
Charlot M.t. Teng (Taipei, TAIWAN)
Michael White (California)
Scott White (Alabama)



Dendrobates auratus at various stages of growth by Susan Vickberg-Friend.